

WHAT IS CLAIMED IS:

1. A method for forming a dual actuator pivot, comprising:

press fitting a first ball bearing onto a shaft to make a subassembly;

press fitting a second ball bearing into a top bore of a first sleeve to make

5 subassembly;

press fitting a third ball bearing into a bottom bore of a second sleeve and

press fitting a fourth ball bearing into a top bore of the second sleeve to make a

subassembly;

stacking on the shaft subassembly the first sleeve subassembly, a spacer,

10 and second sleeve subassembly; and

applying an axial load to the first sleeve subassembly, a spacer, and second

sleeve subassembly to press fit the first sleeve subassembly, a spacer, and second

sleeve subassembly to the shaft assembly to form a complete dual actuator pivot

assembly.

15 2. The method of claim 1 further comprising vibrating the complete dual actuator pivot assembly at a low amplitude simultaneously while applying the axial load.

3. The method of claim 2 further comprising measuring the frequency spectrum for the vibrating complete dual actuator pivot assembly to obtain a
20 resonance frequency for the first sleeve subassembly and for the second sleeve subassembly.

4. The method of claim 3 further comprising adjusting the axial load while measuring the frequency spectrum for the vibrating complete dual actuator pivot assembly to select a desired resonance frequency for the first sleeve subassembly and for the second sleeve subassembly.

5 5. The method of claim 1 further comprising chilling the shaft assembly before stacking on the shaft subassembly the first sleeve subassembly, a spacer, and second sleeve subassembly.

6. The method of claim 1 further comprising heating the first sleeve subassembly, a spacer, and second sleeve subassembly before stacking on the
10 shaft subassembly.

7. The method of claim 1 further comprising initially forming steps on the shaft, wherein the steps are formed to have diameters matching bearing bore diameters graded from large to small going from a first end of the shaft to a second end of the shaft.

15 8. The method of claim 7 wherein the steps match bearing bore diameters graded from large to small going from the bottom to the top of the shaft so that the bearings at the bottom of the shaft do not produce high frictional forces against the full length of the shaft during assembly.

9. The method of claim 1 further comprising initially forming a flangeless shaft comprising large diameter areas formed at a first and second end of the shaft and a reduced diameter area between the large diameter areas.

10. The method of claim 9 wherein the large diameter areas provide a
5 interference press fit with the fourth ball bearing press fitted into the top bore of the second sleeve and with the first ball bearing press fitted at the shaft base and provide a snug slip fit at the reduced diameter area for the third ball bearing press fitted into the bottom bore of the second sleeve and the second ball bearing press fitted into a top bore of the first sleeve.